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Dated: May 5, 2010
Electronic Signature for Stephen J. Brown: /Stephen J. Brown/

Docket No.: LOREAL 3.0-003
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Bertrand Lion

Application No.: 10/735,320

Group Art Unit: 1615

Filed: December 12, 2003

Examiner: B. P. Barham

For: DISPERSIONS OF POLYMERS IN
SILICONE MEDIUM, AND
COMPOSITIONS COMPRISING THEM

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant hereby files this brief on Appeal to appeal from the final rejection of claims 1-4 and 6-24 mailed June 15, 2009, and in response to the Notice of Panel Decision from Pre-Appeal Brief Review dated November 5, 2009. The Commissioner is hereby authorized to charge the fee required by 37 C.F.R. § 41.20(b)(2) for the filing of the brief Deposit Account No. 12-1095. The Commissioner is also hereby authorized to charge any other fees that may be due and owing in connection with this appeal to Deposit Account No. 12-1095.

I. REAL PARTY IN INTEREST

The real party in interest is L'Oréal S.A., a corporation of France, having a place of business at 14 Rue Royale, 75008, Paris, France.

II. RELATED APPEALS AND INTERFERENCES

None. Appellant and its legal representatives and assignee are not aware of any other appeals, interferences, or judicial proceedings that may be related to, directly affect, or be directly affected by or have a bearing on the Board's decision in the present appeal.

III. STATUS OF CLAIMS

Claim 5 has been canceled and claims 1-4 and 6-24 are pending in this application. Claims 1-4 and 6-24 have been finally rejected and are the subject of the present appeal.

IV. STATUS OF AMENDMENTS

None. No amendment was filed subsequent to the final rejection of the claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter of the present application relates generally to stable dispersions of particles formed from acrylic polymers in a silicone medium, to cosmetic or pharmaceutical compositions containing these dispersions, and to cosmetic treatment processes using these compositions.

With respect to the claims on appeal (i.e., claims 1-4 and 6-24), claim 1 is independent. A concise explanation the sole independent claim involved in the appeal is provided below (37 C.F.R. § 41.37(c)(v)).

Claim 1 is directed to a dispersion of particles in a non-aqueous, silicone medium (§ [0008] 11.1-2) wherein said particles comprise at least one acrylic polymer (§ [0011] 11.2-3) comprising: (A) a skeleton that is insoluble in said medium (§ [0011] 11.3-4); and (B) a portion of said polymer that is soluble in said medium comprising side chains covalently bonded to said skeleton (§ [0011] 11.4-6), wherein said polymer is obtained by polymerization of a polymerizable mixture (§ [0011] 11.6-8), comprising: (i) a first C₁-C₃ alkyl (meth)acrylate monomer, alone or as a mixture of C₁-C₃ alkyl (meth)acrylate monomers, in the presence of one or more additional monomers selected from the group consisting of acrylic acid and methacrylic acid (§ [0011] 11.9-14); and (ii) at least one silicone macromonomer comprising an end group that reacts during said polymerization to form said side chains, said macromonomer having a weight-average molecular mass of at least 200 and representing 0.05% to 20% by weight of the polymer (§ [0011] 11.15-19).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-4 and 6-24 are obvious over Suzuki, et al., U.S. Patent 5,219,560 ("*Suzuki*").

Whether claims 1-4 and 6-24 are obvious over Torgerson, et al., WO 93/23446 ("*Torgerson*") as evidenced by Mougin, et al., U.S. Patent 5,851,517 ("*Mougin*").

VII. ARGUMENT

A. Synopsis of Argument

The crux of this appeal concerns the evidence of unexpected results presented in the 37 C.F.R. § 1.132 Declarations of Bertrand Lion and Pascal Arnaud and specifically whether the

evidence is commensurate in scope with claims. In his declaration, Mr. Arnaud states that:

Based on my knowledge and experience in the field of cosmetic foundations, I believe that **a person of ordinary skill in the art would not have expected that a cosmetic composition containing a dispersion of a polymer with a skeleton containing a C₁-C₃ (meth)acrylate and acrylic acid and/or methacrylic acid, as claimed, would exhibit an increase in transfer resistance over a polymer without acrylic acid or methacrylic acid.** Thus, in my opinion, the result obtained, which in this case was a 7-fold increase in transfer resistance, was unexpected.

(Arnaud Declaration, ¶ 12 (emphasis added).) Thus, Mr. Arnaud concludes that the evidence presented, which includes data generated from use of a single claimed embodiment, supports a conclusion that **the class of polymer dispersions recited in the claims performs unexpectedly better than the class of polymers taught by Suzuki**, the closest prior art of record. Thus, in Appellant's view, the evidence is commensurate in scope with the claims.

The Examiner has conceded that the results presented in the declarations are sufficient to show unexpected results. However, the Examiner has maintained that the unexpectedness of the results cannot be extrapolated beyond the single inventive embodiment used in the comparative tests described in the declarations. The Examiner has offered no evidence or reasoning to support this allegation. Thus, there is nothing on the record that casts doubt upon or otherwise refutes Mr. Arnaud's conclusion that the 7-fold increase in transfer resistance shown in the declaration is indicative of the properties of the entire class of compositions claimed. The Examiner's silence can be taken as a tacit acknowledgement that she has no reason or evidence to rebut Mr. Arnaud's conclusion. In view of the foregoing, Appellant submits

that the evidence presented in the declarations demonstrates unexpected results commensurate with the full scope of the claimed invention, and establishes nonobviousness of the claims on appeal over the collective teachings of the cited prior art publications.

The showing of unexpected results aside, the rejections are insufficient on their face to support a finding of *prima facie* obviousness under *Graham v. John Deere Co.* (383 U.S. 1, 148 U.S.P.Q. 459 (1966)) as reaffirmed by the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 U.S.P.Q.2d 1385 (2007). (See M.P.E.P. § 2141.) The rejections do not set forth the required factual findings that ascertain the differences between the claimed invention and the prior art and that resolve the level of ordinary skill in the pertinent art. Nor do the rejections articulate any reason or rationale why one of skill in the art would have modified the cited references to arrive at the claimed invention, as required. Thus, the rejections are both factually and legally insufficient under *Graham* and *KSR*, and do not meet the requirements set forth by the USPTO to establish obviousness. (M.P.E.P. § 2141 "Examination Guidelines for Determining Obviousness".)

B. The Cited References

Suzuki is primarily directed to "a cosmetic composition comprising an acryl-silicone graft copolymer which is prepared by radical polymerization of (i) a dimethylpolysiloxane compound having a polymerizable radical group on one of the molecular chain terminals and (ii) a radically polymerizable monomer comprising as major components an acrylate or methacrylate or both." (Col.1 11.62-68.) *Suzuki* teaches that its cosmetic compositions may

contain the graft copolymer and a low-viscosity silicone oil. (Col.2 11.14-17.)

Suzuki's examples illustrate 6 embodiments of the graft copolymers of its invention. All 6 of these copolymers are made from the polymerization of a dimethylpolysiloxane having a methacrylate group, methylmethacrylate, and one or more additional components. (Reference Examples 1-5 (col.16 11.54 - col. 8 11.38) and Example 3 (col.18 11.62 - col.19 11.19.) None of the additional components in these 6 embodiments, however, includes acrylic acid or methacrylic acid. In short, *Suzuki* does not teach any grafted copolymer including acrylic acid or methacrylic acid, as claimed. Thus, *Suzuki* does not exemplify any polymer with a skeleton including acrylic acid or methacrylic acid, as claimed.

In column 3, lines 50-61, *Suzuki* teaches that the radically polymerizable monomers that make up the skeleton of its graft copolymers upon polymerization, have acrylate, methacrylate, or both, as its major component. A list of examples of acrylates and methacrylates follows. However, this list does not include the acid counterparts thereof, i.e., acrylic acid and methacrylic acid. In column 4, lines 1-9, *Suzuki* teaches that other components may be included in the radically polymerizable monomer, including (meth)acrylic acid, as clearly optional ingredients. This is consistent with all of *Suzuki's* examples, none of which shows the use of (meth)acrylic acid.

Torgerson is primarily directed to "adhesive agents containing polysiloxane-grafted polymers and to compositions, such as cosmetic compositions, containing such adhesive agents." (P.1 11.7-9.) *Torgerson* teaches that the polysiloxane grafted polymer is "made by the polymerization of polymerizable, polysiloxane containing monomers with polymerizable, non-polysiloxane-containing

monomers" (P.3 11.11-14.) The non-polysiloxane monomers can be selected from monomers including n-butyl methacrylate, isobutyl methacrylate, t-butyl methacrylate, 2-ethylhexyl methacrylate, methyl methacrylate, acrylic acid, methacrylic acid, and hydroxyethyl methacrylate. (P.7 11.15-21; p.8 1.9 - p.9 1.8.) *Torgerson* teaches that its compositions may contain a solvent such as a siloxane, including cyclomethicone. (P.16 11.10-25.)

Torgerson discloses two specific examples of the copolymers used in its compositions. One is a copolymer of t-butyl acrylate, acrylic acid, and polydimethylsiloxane (Experimental A). (P.30 1.22 - p.31 11.3.) The other is copolymer of t-butyl acrylate and polydimethylsiloxane (Experimental B). (P.31 11.4-24.) Both are produced as dry compounds. The copolymers are used in various exemplary compositions. (See Examples I-XI (P.31 1.25 - p.36 1.23.) Only two of these examples include non-aqueous, silicone compounds (Examples IX and X). Examples IX and X are hair styling/conditioner compositions containing the copolymer of Experimental B. (P.34 11.23-24.) The silicone compounds are octamethyl cyclotetrasiloxane and decamethyl cyclopentasiloxane. (P.34 11.25-26.) The copolymer, the silicone compounds, and butyl stearate are combined to form a "Styling Polymer Premix," which is later mixed with other ingredients, including a significant amount of water, to form the final composition. (P.34 11.23-27; p.35 11.14-16.)

Thus, the only combination of the copolymer and a non-aqueous, silicone compound medium disclosed by *Torgerson* is the styling polymer premix of Examples IX and X, before its combination with the other ingredients in the styling/conditioner compositions. The polymer in this premix is based on t-butyl acrylate without

(meth)acrylic acid. There is no teaching in *Torgerson* that discloses or suggests that the premix is a dispersion of polymer particles. The claims on appeal, on the other hand, recite cosmetic compositions containing dispersions of polymer particles, in which the polymer skeleton is based on C₁-C₃ (meth)acrylate and (meth)acrylic acid. Moreover, *Torgerson's* t-butyl acrylate is a C₄ acrylate, and thus, is not a C₁-C₃ (meth)acrylate as recited in the claims on appeal.

Mougin is primarily directed to a dispersion of polymer particles in a non-aqueous medium. (Abstract.) *Mougin* teaches that the non-aqueous medium may include silicone oils (such as cyclomethicone or polydimethylsiloxane), which have "a global solubility parameter according to the Hansen solubility space of less than or equal to 17 (MPa)^{1/2}." (Col.3 11.30-36 and 51-56.)

C. The Examiner's Position

The Examiner has taken the position that:

The declarations under 37 CFR 1.132 filed 3/23/09 are insufficient to overcome the rejection of claims 1-4 and 6-24 based upon [*Suzuki*] or [*Torgerson*] as evidenced by [*Mougin*] as set forth in the last Office action because: while they are sufficient for the specific instance of a medium of decamethylcyclotetrasiloxane and a polymer of methylacrylate, methacrylic acid, and monomethacryloxypropylpolydimethylsiloxane, the instant claims are drawn to a much broader scope and there is not a single claim that claims this narrow embodiment nor any showing that any other embodiment within the broad scope also has this unexpected result.

It refer(s) only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716. As such the rejections of record are maintained.

(Paper No. 20090610 at 2.)

The rejections of claims 1-4 and 5-26 under 35 U.S.C. § 103(a) over *Suzuki*, and also, over *Torgerson* as evidenced by *Mougin* have been maintained. With regard to the rejection over *Suzuki*, the Examiner has taken the position that:

The limitations of claims 1, 3-4, and 18-20 are taught by [Suzuki]:

- [Suzuki] teaches a cosmetic composition comprising a acryl-silicone graft copolymer prepared by i) a dimethylpolysiloxane compound with polymerizable radical group on one of the terminal ends and ii) a radically polymerizable monomer comprising as major components acrylate and/or methacrylate and including various other monomers such as (meth)acrylic acid (abstract, col. 3, line 26-col. 4, line 6).

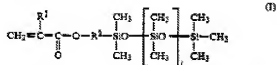
- The acrylate and/or methacrylate monomers are included in an amount of at least 50% by weight of the copolymer and specific monomers include methyl(meth)acrylate, ethyl(meth)acrylate, and the like (col. 3, lines 55-65).

- [Suzuki] teaches that the copolymer is combined with a low-viscosity silicone oil like dimethylpolysiloxane to form a stable composition (abstract, col. 5, lines 7-22).

The limitations of claims 7-17 are taught by [Suzuki]:

- As in instant claims 7-8 and 16-17, the molecular weight of the copolymer is taught to be 3,000-200,000, preferably 5,000-100,000 (col. 5, lines 1-5).

- As in instant claims 9-15, the silicone macromonomer is of the following formula (col. 2, lines 35-48, claim 1):



wherein R¹ represents a methyl group or a hydrogen atom, R² represents a divalent, linear or branched hydrocarbon group having 1-10 carbon atoms and optionally containing one or two ether bonds therein, and n is a value of 3-300.

- [Suzuki] teaches that the silicone monomer is present in the copolymer in a 1:19-2:1 ratio (col. 4, lines 15-16).

The limitations of claims 2 and 20-24 are taught by [Suzuki]:

- A mixture of acceptable carriers are taught by [Suzuki] which are suitable such as volatile silicon derivatives, especially dimethylpolysiloxanes, such as methylphenyl polysiloxane, decamethylcyclopentasiloxane, etc. (pg. 5, lines 19-20, Examples 2, 28-31).
- [Suzuki] teaches additional components such as surfactants, hydrocarbons, coloring agents or pigments, preservatives, etc (abstract, Examples).
- The copolymer is included in the cosmetic compositions in an amount from 1-100% by weight, with 5-60% preferable (col. 6, lines 1-3 and 15-28).
- [Suzuki] teaches a product for the hair and cosmetic compositions such as make up, mascara, eye liner, skin creams and lotions, etc (col. 5, lines 59-65, Examples).

(Paper No. 20090610 at 3-5.)

With regard to the rejection over *Torgerson* as evidenced by *Mougin*, the Examiner has taken the position that:

The limitations of claims 1, 3-4, and 7-8 are taught by [Torgerson]:

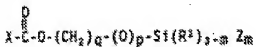
- [Torgerson] teaches a cosmetic composition comprising adhesive agents which are polysiloxane grafted polymers made by polymerization of polysiloxane containing monomers and non polysiloxane containing monomers, the agent having a weight average molecular weight of at least [a]bout 20,000, and 1 to 50% by weight of polysiloxane containing monomer (abstract). [Torgerson] teaches that the molecular weight of a vinyl polymer backbone, polydimethylsiloxane macromer is at least about 500, preferably from about 1000 to 100,000, most preferably about 2000 to about 50,000 (pg.5, lines 29-pg. 6, line 7).
- [Torgerson] teaches that the polysiloxane grafted polymers comprise 1-50% by weight of polysiloxane monomers and 50-99% by weight of the non-polysiloxane monomers which can be selected from A and B monomers (pg.8, lines 3-8). A monomers are taught by [Torgerson] to preferably include n-butyl methacrylate, isobutyl methacrylate, t-butyl methacrylate, 2-

ethylhexyl methacrylate, methyl methacrylate, etc, while B monomers include acrylic acid, methacrylic acid, hydroxyethyl methacrylate, etc. (pg. 8, line 9-pg. 9, line 8).

• [Torgerson] teaches polymer compositions with monomers A, B and C dispersible in nonpolar solvents, such as cyclomethicone (pg. 10, line 32-pg. 11, line 2).

The limitations of claims 6 and 9-15 are taught by [Torgerson]:

• [Torgerson] teaches that the preferred polysiloxane monomer has the formula:



where m is 1-3, (preferably m=1); p is 0 or 1; q is 2-6; R¹ is hydrogen, hydroxyl, lower alkyl, alkoxy, alkylamino, aryl

or alkaryl (preferably alkyl); X is $\begin{matrix} \text{CH}_3\text{C}- \\ | \\ \text{R}^2 \end{matrix}$; R² is preferably hydrogen R³ is hydrogen, methyl or CH₂COOH (preferably



methyl); and Z is $\begin{matrix} \text{R}^4 \\ | \\ \text{R}^5 \end{matrix}$; R⁴, R⁵, and R⁶, independently, preferably lower alkyl, r is an integer of about 5 or higher, preferably 10-1500 (most preferably about 100 to about 250). Most preferably R⁴, R⁵, and R⁶ are methyl, p=0 and q=3 and the level of this monomer is from 1 to about 50%, preferably about 1 to about 40%, more preferably about 2 to about 25% (pg. 9, line 9 to pg. 10, line 15).

• [Torgerson] teaches that polymer which are soluble or dispersible in less polar or nonpolar solvents, such as cyclomethicone (which is the silicone oil polydimethylsiloxanes, and evidenced by [Mougin] teaches above as a non-aqueous liquids of Hanson solubility of less than 17 (MPa)^{1/2}) ([Torgerson] pg.10, line 30 and [Mougin] col.3, lines 30-55). [Torgerson] teaches the compositions preferably comprise about 5-98% monomer A, from 0 to 80%, most preferably 0 to 20%) of monomer B, and from about 1 to about 40% (preferably 2 to about 25%) of monomer C (pg.10, line 30-pg.11, line 2).

• [Torgerson] teach examples polymers I-III with acrylic and silicone macromers, specifically polymer III is a PDMS macromer (polydimethylsiloxane) polymerized with isobutyl

methacrylate, ethylhexylmethacrylate and
dimethylmethacrylamide (pg.12, line 7-pg. 13, line 35).

The limitations of 16-19 are taught by [Torgerson]:

- [Torgerson] teaches that the polymeric agent has a weight average molecular weight of at least about 20,000 (abstract, pg. 4, lines 33-35) and that there is no upper limit but most preferably between the limits of about 100,000 and about 750,000 (pg.5, lines 1-8).
- [Torgerson] teaches that the particles are of the size of a few hundred nm or less (pg. 6, lines 27-28).

The limitations of claims 2 and 20-24 are taught by [Torgerson]:

- A mixture of acceptable carriers are taught by [Torgerson] which are suitable for application to the skin and hair are present in the amount of about 0.5-99.5%, most preferably from about 10 to about 98% (col. 15, lines 26-32), such as volatile silicon derivatives, especially siloxanes, such as phenyl pentamethyl disiloxane, methoxypropyl heptmethyl cyclotetrasiloxane, cyclomethicone, dimethicone, etc. (pg. 16, lines 16-25). As evidenced by [Mougin] silicone oils above have a Hanson solubility of less than 17 (MPa)^{1/2} ([Mougin] col.3, lines 30-55).
- [Torgerson] teaches additional components such as surfactants, pearlescent aids, coloring agents, oxidizing agents, reducing agents, sequestering agents, perfumes, polymer plasticizing agents, etc (pg. 28, line 22-pg. 29, line 13).
- Examples I-III teach the polysiloxane graft polymer composition in the amount of 4.5% by weight of the composition, example VIII teaches 3%, example XI teaches 4% by weight.
- [Torgerson] teaches a product for the hair (hair spray, mousse, tonic, shampoo, conditioner) (pg. 16, lines 1-3) and cosmetic compositions such as make up, mascara, eye liner, nail polish, skin creams and lotions, etc (pg. 4, lines 26-32).

(Paper No. 20090610 at 5-8.)

D. The Unexpected Results Previously Submitted Are
Commensurate In Scope With The Claims

In the Response filed March 18, 2008, the Applicant presented declarations containing clear evidence of the unexpectedly better transfer resistance properties of a claimed cosmetic composition containing the inventive polymer dispersion as compared to a cosmetic composition containing a graft copolymer made from the polymerization of a dimethylsiloxane and methyl acrylate, such as that of the closest cited prior art — the Suzuki reference.

In the final Office Action, it was conceded that the results presented in the declarations are sufficient to show unexpected results, and therefore, demonstrate nonobviousness. (Paper No. 20090610 at 2.) However, it was alleged that the results are sufficient only for the specific inventive composition tested:

[the results] are sufficient for the specific instance of a medium of decamethylcyclopentasiloxane and a polymer of methylacrylate, methacrylic acid, and monomethacryloxypropylpolydimethylsiloxane, the instant claims are drawn to a much broader scope and there is not a single claim that claims this narrow embodiment nor any showing that any other embodiment within the broad scope also has this unexpected result.

(Id.) The Office has concluded that the results are not commensurate in scope with the claims:

It refer(s) only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims.

(Id.)

The position taken by the Examiner appears to ignore the conclusions made by Pascal Arnaud based on the experimental results presented. Mr. Arnaud's conclusion is not just that the single inventive composition is unexpectedly better than the comparative composition. Instead, Mr. Arnaud concludes that:

Based on my knowledge and experience in the field of cosmetic foundations, I believe that **a person of ordinary skill in the art would not have expected that a cosmetic composition containing a dispersion of a polymer with a skeleton containing a C₁-C₃ (meth)acrylate and acrylic acid and/or methacrylic acid, as claimed, would exhibit an increase in transfer resistance over a polymer without acrylic acid or methacrylic acid.** Thus, in my opinion, the result obtained, which in this case was a 7-fold increase in transfer resistance, was unexpected.

(Declaration of Pascal Arnaud, ¶ 12 (emphasis added).) Thus, Mr. Arnaud concludes that the data presented support a conclusion that **the class of polymer dispersions recited in the claims performs unexpectedly better than the class of polymers taught by Suzuki.** This evidence is unrefuted on the record.

In maintaining the rejection, the Examiner appears to conclude that as a general proposition, a declaration presenting unexpected results based on a single embodiment of a claimed invention cannot be sufficient to support claims to a genus. However, there is no such per se rule for the consideration of evidence of unexpected results:

NONOBVIOUSNESS OF A GENUS OR CLAIMED RANGE MAY BE SUPPORTED BY DATA SHOWING UNEXPECTED RESULTS OF A SPECIES OR NARROWER RANGE UNDER CERTAIN CIRCUMSTANCES

The nonobviousness of a broader claimed range can be supported by evidence based on unexpected results from testing a narrower range if one of ordinary skill in the art would be able to determine a trend in the exemplified data which would allow the artisan to reasonably extend the

probative value thereof. *In re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979)

M.P.E.P. § 716.02(d) (I).

Regardless of whether this is actually the case, it remains clear that the Examiner has failed to properly consider all of the Declaration evidence of unexpected results. In short, The Examiner has not presented any evidence or reasoning to rebut Mr. Arnaud's conclusion.

Absent such evidence or reasoning, the conclusion reached in the Arnaud Declaration stands completely unrebutted. In sum, the record contains unchallenged evidence that the claimed dispersions possess unexpectedly better transfer resistance properties than the class of polymers taught by Suzuki. Thus, the rejections of the claims based on obviousness cannot be sustained.

Despite the Examiner's concession that the evidence in the Declarations is sufficient to support a conclusion of unexpected results, for the sake of completeness, the cited references and unexpected results are discussed in detail below.

1. The Claimed Compositions

The claimed cosmetic compositions contain the claimed dispersions of polymer particles in a non-aqueous, silicone medium. The polymer particles have a skeleton made from a first C₁-C₃ alkyl (meth)acrylate monomer, alone or as a mixture of C₁-C₃ alkyl (meth)acrylate monomers, and acrylic acid and/or methacrylic acid, and side chains made from a silicone macromonomer.

2. Suzuki

Suzuki teaches that the radically polymerizable monomers that make up the skeleton of its graft copolymers upon polymerization, have acrylate or methacrylate, or both, as its

major component(s). As the Examiner correctly points out, Suzuki teaches that other components may be included in the radically polymerizable monomer, including (meth)acrylic acid. In fact, Suzuki does not exemplify any polymer with a skeleton including acrylic acid or methacrylic acid, as claimed.

This is not surprising. The optional nature of the monomer clearly implies that its inclusion would not have been expected to impart any exceptional or non-obvious cosmetic qualities to the polymers of Suzuki. Indeed, Suzuki is entirely silent as to the nature or extent of the effect of the presence of these optional monomers in its compositions. In light of this silence, a person of ordinary skill in the art would not have expected the addition of (meth)acrylic acid would have a significant impact on the overall properties of the graft copolymers. (Arnaud Declaration, ¶ 12.)

The Arnaud Declaration describes the comparison of a claimed cosmetic composition containing the claimed polymer dispersion to a cosmetic composition in accordance with Suzuki, i.e., the comparative cosmetic composition including a graft copolymer made from the polymerization of a dimethylsiloxane and methyl acrylate. (Arnaud Declaration, ¶ 4 and Lion Declaration, ¶¶ 3-5.) Therefore, the evidence in the Arnaud Declaration is a result of a direct comparison of the invention and the closest prior art of record, namely Suzuki.

Transfer resistance, as described in the Arnaud Declaration, is a measure of the ability of a substance to remain on the substrate to which it is applied when the substrate is brought into contact with another surface. (¶ 8.) In cosmetics, for example, an increased transfer resistance means that a composition is more likely to remain on the skin to which it is

applied when the skin is contacted with, for example, clothing or other skin, e.g., face to hand contact.

As explained in the Pascal Declaration, the claimed cosmetic composition was found to exhibit 7-times better results than the comparative cosmetic composition in terms of transfer resistance. Accordingly, the claimed cosmetic composition exhibits a much higher transfer resistance than does the comparative cosmetic composition. (§ 11.)

In sum, as shown in the Declaration, when a claimed cosmetic composition is directly compared to a cosmetic composition in accordance with Suzuki's teachings, the claimed cosmetic composition exhibits a 7-fold increase in transfer resistance. (Id., § 11.) Based on this evidence and his knowledge and experience in the field of cosmetic compositions, Mr. Arnaud concludes that "a person of ordinary skill in the art would not have expected that a cosmetic composition containing a dispersion of a polymer with a skeleton containing a C₁-C₃ (meth)acrylate and acrylic acid and/or methacrylic acid, as claimed, would exhibit an increase in transfer resistance over a polymer without acrylic acid or methacrylic acid." (Id., § 12.)

3. Torgerson

Torgerson discloses 2 specific examples of the copolymers used in its compositions. One is a copolymer of t-butyl acrylate, acrylic acid, and polydimethylsiloxane (Experimental A). (P. 30, line 22 - p. 31, line 3.) The other is copolymer of t-butyl acrylate and polydimethylsiloxane (Experimental B). (P. 31, lines 4-24.) Both are produced as dry compounds. The copolymers are used in various exemplary compositions. (See Examples I-XI (P. 31, line 25 - p.36, line 23.) Only 2 of these examples include non-

aqueous, silicone compounds (Examples IX and X). Examples IX and X are hair styling/conditioner compositions containing the copolymer of Experimental B. (P. 34, line 24.) The silicone compounds are octamethyl cyclotetrasiloxane and decamethyl cyclopentasiloxane. (P. 34, lines 25-26.) The copolymer, the silicone compounds, and butyl stearate, are combined to form a "Styling Polymer Premix," which is later mixed with other ingredients, including a significant amount of water, to form the final composition. (P. 34, lines 23-27 and p. 35, lines 14-16.)

Thus, the only combination of the copolymer and a non-aqueous, silicone compound medium disclosed by *Torgerson* is the styling polymer premix of Examples IX and X, before its combination with the other ingredients in the styling/conditioner compositions. The polymer in this premix is based on t-butyl acrylate without (meth)acrylic acid and there is nothing in *Torgerson* that discloses or suggests that the premix is a dispersion of polymer particles. The claims, on the other hand, recite cosmetic compositions containing dispersions of polymer particles, in which the polymer skeleton is based on C₁-C₃ (meth)acrylate and (meth)acrylic acid. Moreover, *Torgerson's* t-butyl acrylate is a C₄ acrylate, and thus, is not the claimed C₁-C₃ (meth)acrylate.

The comparative composition tested in the Declaration, includes a polymer based on methyl acrylate (i.e., a C₁-C₃ (meth)acrylate) and monomethacryloyloxypropyl polydimethylsiloxane dispersed as a particle in decamethylcyclopentasiloxane. (Pascal Declaration, ¶ 4 and Lion Declaration, ¶¶ 3-5.) Therefore, the comparative composition is closer to the claimed compositions than the compositions disclosed in *Torgerson*, which contain a polymer based on a C₄ acrylate, i.e., t-butyl acrylate. Accordingly, the comparison described in the Declaration is a closer comparison than

if the claimed composition had been compared to the compositions taught in *Torgerson*. Thus, the comparative results are equally if not even more probative of nonobviousness over collective teachings of prior art based primarily on *Torgerson*:

Applicants ***may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the examiner.*** In *re Holladay*, 584 F.2d 384, 199 USPQ 516 (CCPA 1978); *Ex parte Humber*, 217 USPQ 265 (Bd. App. 1961) (Claims to a 13-chloro substituted compound were rejected as obvious over nonchlorinated analogs of the claimed compound. Evidence showing unexpected results for the claimed compound as compared with the 9-, 12-, and 14- chloro derivatives of the compound rebutted the *prima facie* case of obviousness because the compounds compared against were closer to the claimed invention than the prior art relied upon.).

(M.P.E.P. § 716.02(e) (p. 700-296 (emphasis added)).)

As discussed above, when the claimed cosmetic composition is directly compared to a cosmetic composition in accordance with Suzuki's teachings (i.e., closer prior art than *Torgerson*) the claimed cosmetic composition exhibits a 7-fold increase in transfer resistance. (Declaration, ¶ 11.) Such results were unexpected. (*Id.*, ¶ 12.) Thus, it is submitted that these unexpected results also establish that the claimed invention is nonobvious and patentable over *Torgerson* in view of *Mougin*.

4. Conclusion

In light of the foregoing discussion of unexpected results, Applicant submits that the presently claimed invention defines a patentable contribution to the art. In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance.

E. The Rejections Are Legally And Factually Insufficient To

Support *Prima Facie* Obviousness

More fundamentally, the rejections are insufficient on their face to support a finding of *prima facie* obviousness under the requirements of *Graham v. John Deere Co.* (383 U.S. 1, 148 USPQ 459 (1966)) as reaffirmed by the Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007). (See M.P.E.P. § 2141.) Briefly, the rejections do not set forth any factual findings that ascertain the differences between the claimed invention and the prior art and resolve the level of ordinary skill in the pertinent art. Nor do the rejections articulate any reason or rationale why one of skill in the art would have modified the cited references to arrive at the claims invention. Absent these findings and rationale, a rejection cannot be sufficient to support *prima facie* obviousness.

Accordingly, the rejections are on their face are both legally and factually deficient and do not present a *prima facie* case for the obviousness of the claims on appeal.

In particular, *Graham* requires the Examiner to 1) determine the scope and content of the prior art, 2) ascertain the differences between the claimed invention and the prior art; and 3) resolve the level of ordinary skill in the pertinent art. M.P.E.P. § 2141. In *KSR*, "the Supreme Court . . . reaffirmed the familiar framework for determining obviousness as set forth in [*Graham*]. *KSR*, 82 USPQ2d at 1391." (M.P.E.P. § 2141.)

Once this factual inquiry is complete, the Examiner must then:

provide an explanation to support an obviousness rejection under 35 U.S.C. 103. 35 U.S.C. 132 requires that the applicant be notified of the reasons for the rejection of the claim so that he or she can decide how best to proceed. ***Clearly setting forth findings of fact and the rationale(s)***

to support a rejection in an Office action leads to the prompt resolution of issues pertinent to patentability.

* * *

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that ***"[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."*** *KSR*, 82 USPQ2d at 1396.

M.P.E.P. § 2141 (emphasis added.)

The instant rejections fall far short of these requirements. The rejections consist only of 1) a statement that the claims are obvious over the cited prior art, 2) a brief summary of the claimed invention, and 3) a number of bullet-pointed allegations that particular limitations of the claims are taught by the cited references. Nothing more is provided in the rejections.

Thus, the rejections are devoid of any ascertainment the of differences between the claimed invention and the prior art or any resolution of the level of ordinary skill in the pertinent art. Without these factual determinations, it is impossible to know what gap in the prior art must be closed by the skilled artisan or what level of skill must be attributed to the person presumed to be attempting to close this gap.

Notwithstanding these deficiencies, the rejections also fail to provide any reason or rationale why this undefined skilled artisan would have closed this unidentified gap in the prior art. Absent this reasoning or rationale, no matter how skilled the

artisan or how small the gap, it is legally impossible to determine whether the prior art renders the claimed invention obvious.

In view of the forgoing, the rejections fail to satisfy the minimum requirements set forth in *Graham* and *KSR*, and do not meet the Examination Guidelines for Determining Obviousness promulgated by the USPTO. (M.P.E.P. § 2141.) Accordingly, both rejections are both factually and legally insufficient to support a finding of *prima facie* obviousness.

VIII. CONCLUSION

In light of the above discussion, Appellant requests that the pending rejections be reversed, and the claims allowed to issue as presented.

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Respectfully submitted,

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CLAIMS APPENDIX

1. A dispersion of particles in a non-aqueous, silicone medium wherein said particles comprise at least one acrylic polymer comprising:

(A) a skeleton that is insoluble in said medium; and

(B) a portion of said polymer that is soluble in said medium comprising side chains covalently bonded to said skeleton, wherein said polymer is obtained by polymerization of a polymerizable mixture, comprising:

(i) a first C₁-C₃ alkyl (meth)acrylate monomer, alone or as a mixture of C₁-C₃ alkyl (meth)acrylate monomers, in the presence of one or more additional monomers selected from the group consisting of acrylic acid and methacrylic acid; and

(ii) at least one silicone macromonomer comprising an end group that reacts during said polymerization to form said side chains, said macromonomer having a weight-average molecular mass of at least 200 and representing 0.05% to 20% by weight of the polymer.

2. The dispersion of claim 1, wherein said non-aqueous silicone medium comprises at least 50% by weight of at least one non-aqueous silicone liquid compound having a global solubility parameter according to the Hansen solubility space of less than or equal to 17 (MPa)^{1/2}.

3. The dispersion of claim 1, wherein said first monomer, or mixture of first monomers, is present in an amount of 50-100% by weight of the mixture of first monomer(s) and optional additional monomer(s).

4. The dispersion of claim 1, wherein said first monomer, or mixture of first monomers, is selected from the group consisting of

methyl acrylate; methyl methacrylate; ethyl acrylate; ethyl methacrylate; n-propyl acrylate; n-propyl methacrylate; isopropyl acrylate; and isopropyl methacrylate.

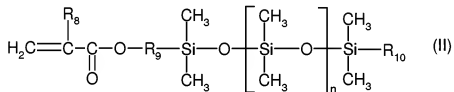
6. The dispersion of claim 1, wherein said silicone macromonomer comprises an end group selected from the group consisting of a vinyl group and a (meth)acryloyloxy group.

7. The dispersion of claim 1, wherein said silicone macromonomer has a weight-average molecular mass (Mw) from 200 to 100,000.

8. The dispersion of claim 7, wherein said weight-average molecular mass (Mw) is from 300 to 50,000.

9. The dispersion of claim 1, wherein said silicone macromonomer comprises a polydimethylsiloxane containing a monoacryloyloxy or monomethacryloyloxy end group.

10. The dispersion of claim 1, wherein said silicone macromonomer is a compound of formula (II)



wherein:

- R₈ is a hydrogen atom or a methyl group;
- R₉ is a divalent linear or branched hydrocarbon group containing from 1 to 10 carbon atoms, said group optionally containing one or two oxygen atoms;
- R₁₀ is a linear or branched alkyl group containing from 1 to 10 carbon atoms; and
- n is an integer from 1 to 300.

11. The dispersion of claim 10, wherein R₈ is a methyl group.

12. The dispersion of claim 10, wherein R_9 is selected from the group consisting of ethylen, propylen, and butylen.

13. The dispersion of claim 10, wherein R_{10} is selected from the group consisting of methyl, ethyl, propyl, butyl, and pentyl.

14. The dispersion of claim 1, wherein said silicone macromonomer is present in the polymer in a proportion of from 2-16% by weight.

15. The dispersion of claim 14, wherein said proportion is from 4-15% by weight.

16. The dispersion of claim 1, wherein said acrylic polymer has a weight-average molecular mass (M_w) of between 10,000 and 300,000.

17. The dispersion of claim 16, wherein said weight-average molecular mass (M_w) is between 20,000 and 200,000.

18. The dispersion of claim 1, wherein said polymer particles have a mean size ranging from 10 to 400 nm.

19. The dispersion of claim 1, wherein said dispersion has a solids content (or dry extract) of from 40-70% by weight of solids.

20. A cosmetic or pharmaceutical composition, comprising a dispersion according to claim 1 and a cosmetically or pharmaceutically acceptable medium.

21. The composition of claim 20, wherein said dispersion is present in an amount of from 3-95% by weight of said composition.

22. The composition of claim 20, wherein said cosmetically or pharmaceutically acceptable medium comprises one or more substances selected from the group consisting of waxes; oils; gums; pasty fatty substances; pigments; fillers; nacles; antioxidants; fragrances; essential oils; preserving agents; cosmetic active agents; moisturizers; vitamins; essential fatty acids;

sphingolipids; sunscreens; surfactants; and liposoluble polymers compatible with fatty substances.

23. The composition of claim 20, which is in the form of a care, cleansing or makeup composition for the skin or keratin materials, a haircare composition, or an anti-sun composition.

24. A cosmetic treatment process for caring for, cleansing and/or making up keratin materials such as the skin, the scalp, the eyelashes, the eyebrows, the lips and the nails, comprising applying the composition of claim 20 to said keratin materials.

EVIDENCE APPENDIX

1. Declaration Under 37 C.F.R. § 1.132 of Pascal Arnaud submitted to the United States Patent and Trademark Office with an Amendment dated March 18, 2008.

2. Declaration Under 37 C.F.R. § 1.132 of Bertrand Lion submitted to the United States Patent and Trademark Office with an Amendment dated March 18, 2008.

RELATED PROCEEDINGS APPENDIX

None.